

What is claimed is:

1. An open-drain N-channel MOSFET comprising:  
a drain region formed of an N-type semiconductor layer;  
a P-type impurity diffusion layer formed within the drain region;  
two high-concentration N-type impurity diffusion layers formed within the drain region so as to sandwich the P-type impurity diffusion layer; and  
a drain electrode connected to the P-type impurity diffusion layer and to the two high-concentration N-type impurity diffusion layers.
2. A semiconductor integrated circuit device comprising:  
an output circuit,  
wherein the output circuit comprises:  
an open-drain N-channel MOSFET; and  
an output terminal connected to a drain of the open-drain N-channel MOSFET,  
wherein the open-drain N-channel MOSFET comprises:  
a drain region formed of an N-type semiconductor layer;  
a P-type impurity diffusion layer formed within the drain region;  
two high-concentration N-type impurity diffusion layers formed within the drain region so as to sandwich the P-type impurity diffusion layer; and  
a drain electrode connected to the P-type impurity diffusion layer and to the two high-concentration N-type impurity diffusion layers.
3. A semiconductor integrated circuit device as claimed in claim 2,

wherein there are provided a plurality of the output circuit.

4. A semiconductor integrated circuit device as claimed in claim 3,  
wherein a peripheral portion of the drain region of the open-drain N-channel MOSFET and a peripheral portion of a source region of the open-drain N-channel MOSFET each have, as seen in a plan view, a substantially circular shape or a substantially regular-polygonal shape with four or more sides, and gates of the open-drain N-channel MOSFET are formed in a net-like pattern.

5. A semiconductor integrated circuit device as claimed in claim 3,  
wherein the drain region and a source region of the open-drain N-channel MOSFET are formed in a pattern like teeth of a comb.

6. A semiconductor integrated circuit device as claimed in claim 3,  
wherein a peripheral portion of the drain region of the open-drain N-channel MOSFET and a peripheral portion of a source region of the open-drain N-channel MOSFET have, as seen in a plan view, different shapes.

7. A semiconductor integrated circuit device as claimed in claim 3,  
wherein a peripheral portion of the drain region of the open-drain N-channel MOSFET and a peripheral portion of a source region of the open-drain N-channel MOSFET each have, as seen in a plan view, a substantially circular shape or a substantially regular-polygonal shape with four or more sides, and gates of the open-drain N-channel MOSFET are formed in a net-like pattern,

wherein the drain region and the source region of the open-drain N-channel MOSFET are formed in a pattern like teeth of a comb, and

wherein the peripheral portion of the drain region of the open-drain N-channel MOSFET and the peripheral portion of the source region of the open-drain N-channel MOSFET have, as seen in a plan view, different shapes.